principle is readily taken up by the spirit. The absolute alcohol is for that reason also preferable to the diluted.

11. *Wine of Sanguinaria*. It is prepared in the same manner as the official tincture, substituting sherry wine for the diluted alcohol. The dose is the same as the tincture, and is considered more pleasant and powerful.

12. *Vinegar of Sanguinaria*. Take of sanguinaria fresh and sliced, half an ounce; vinegar, two pints. Shake it frequently, and it is ready for use in a few hours. This is the process of Dr. Jennings. I think it preferable to recommend the root to be bruised, and rubbed up with the vinegar, and filtered after a few hours.

13. *Syrup of Sanguinaria* is prepared by Wiegand as follows:—Take of bloodroot in coarse powder, eight ounces; acetic acid, four ounces; water, five pints; sugar, two pounds. Add to the powder two fluidounces of the acetic acid, mixed with a pint of the water; macerate for three days, transfer to a percolator, and displace with the remainder of the water mixed with the remainder of the acetic acid. Evaporate the infusion obtained, by means of a water-bath, to eighteen fluidounces, then add the sugar, and form a syrup, straining, if necessary. This is serviceable to young children. The dose, as an emetic, is from one to two fluidrachms.

14. *Ointment of Sanguinaria*. Take of the powdered root a drachm; lard, an ounce. Mix.

15. *Sanguinarina*. This is the alkaloid, and has not been used in medicine; I have prescribed some of the salts of it, prepared by myself.

CASE OF SUSPECTED POISONING BY OXALIC ACID OR ITS SALTS: RECOVERY: WITH REMARKS.

By THOMAS SKINNER, M.D., Liverpool.

[Read before the Liverpool Medical Society, January 12th, 1860.]

THE crime of secret poisoning has become so common of late, as to necessitate increased activity on the part of the profession, in order that they may detect it, if possible, in time to save the victim; if not, at least in time to detect the criminal. The safety of our patients, the safety of society at large, and our own interest, equally demand this of us.

I have thought that the following case would be interesting to you for several reasons:—First, as the crime was detected in time to save the victim, though too late to bring the evidence home to the criminal; secondly, as it is an unusual poison to be made use of for the purpose of committing murder, especially by slow poisoning; thirdly, on account of the great difficulties connected with the detection of the poison in most cases; and lastly, because of the extensive and interesting field it lays open for further investigation.

Professor Christison, in an interesting memoir in the *Edinburgh Medical and Surgical Journal*, so far back as April 1823, made the following prophetic statement:—

"Though oxalic acid has hitherto been given through accident only, there is much reason to fear it may also be given by design, when its properties are more generally known. Much inducement is already held out to the poisoner by the readiness with which it may be administered; and it will be no small additional temptation, that, in certain circumstances, there will be as much difficulty in detecting it." (Vol. xix., p. 194.)

CASE. C. W., unmarried, a young, healthy, and intelligent, but unsuspecting female, without relations of any kind, was left in possession of household furniture, bed and table-linen, and *bijouterie*, to the value of about £100. Her means of living are comparatively moderate, and she was attended by a female domestic much older than herself, who had long obtained the upper hand of her. They were the sole occupants of the house.

On the 8th of November last, the young mistress was seized with a severe rigor, followed by an attack of acute peritonitis, seemingly arising from no very evident cause. Leeches, to the number of twelve, were applied to the abdomen, and the ordinary ice and opium treatment was adopted. On November 15th, or seven days thereafter, the patient was convalescent, and put upon quinine, port wine, and food easy of digestion. On the fifth day of the convalescence, a relapse occurred. The peritonitis, which before was general, was now limited to a small spot in the left umbilical region, and, though so limited, yet the pain was exquisitely acute. The pulse was 110, hard

and wiry; the tongue much furred, thirst intense, and occasional vomiting and retching. The forehead was covered with beads of perspiration, the knees drawn up, and the general aspect of the patient was expressive of extreme agony. No cause was traceable to account for this relapse, no more than for the primary attack. Leeches were again applied, to the number of eight, over the painful spot, followed by large anodyne poultices, and ice and opium, as much as could be borne, were administered internally. In two days or so the patient was again convalescent; the pulse 64, but the appetite on neither occasion returned, and there was always present an unaccountable feeling of nausea. She was again ordered port wine, and as much rice porridge as she liked, thrice daily. No medicaments of any kind were to be given, and, as my patient was seemingly out of danger, I lessened the frequency of my visits.

On December 1st I saw her in the morning. She was then still complaining of the nausea. She thought it was arising from the presence of bile in her stomach, and she asked me if I would allow her some warm water to relieve it. I consented, but the warm water, though it emptied the stomach, did not afford relief to the feeling of nausea. Before leaving the patient's house on this occasion, I began to have misgivings about the domestic, as I could not account for the nausea, so I ordered her to keep anything which might come from her mistress for my inspection.

Next day, her servant, who also nursed her and gave her all her food and medicine, called at my house between the hours of six and seven a.m., to inform me that her mistress was very ill with vomiting, and just at the point of death. Such a sudden change, entirely out of the natural course of the disease, added to my previous misgivings, made me at once suspect poisoning; I therefore took with me a clean phial in order to secure some of the vomit.

On my arriving at the house it was exactly seven a.m. I found the messenger coolly cleaning the windows and humming to herself, instead of attending to my patient, who was then almost dying. She opened the door, and told me that her mistress was "*bilious*," that she was often complaining this way, that she (the servant) was tired of her place, as her mistress was no sooner well of one thing than she was ill of another, and she was not able to sit up all night and work all day." After this heartless tirade was delivered, which, to say the least of it, was false, I hurried to the patient, and secured six ounces of a greenish fluid, which I saw her vomit. The following was her condition:—Her extremities were quite cold, the forehead and cheeks moist and clammy; the pulse 84, but small and easily compressible, the respiration impeded; the tongue was thickly furred, the colour of it like wash-leather, and red round the edges; the eyes were lustreless which twenty hours before were bright and shining; the cheeks were fallen in, the countenance anxious, and the general expression cadaverous. She had an uncontrollable thirst, which had to be gratified, despite the urgency of the retching, vomiting, and hiccup; above all, she suffered most from a severe *burning* pain internally, at the scrobiculus cordis, tender when touched, and increased on pressure. The pupils were dilated, otherwise the organs of special sense and of volition were intact, but from sheer exhaustion she was unable to give me any particulars, beyond the fact, that she had been vomiting more or less from the time of my last visit (a space of twenty hours). The moment that I saw her, I had not the slightest doubt she was labouring under the influence of an irritant poison.

As the patient had been vomiting for upwards of twenty hours, and was rapidly passing into a state of collapse, further emesis was needless; and, as the poisonous substance was as yet unknown, no direct antidote could be relied on; I therefore determined, if possible, to stop the violent action of the stomach, and to rouse the system. For these purposes, a large mustard poultice was ordered to the hypogastrium, bottles of hot water to her feet and along her sides, some sodawater to be drunk, and an experienced nurse to be got; while I went myself to the nearest apothecary for some pills of creasote and morphia, one of which I administered with my own hands. As I had an appointment with my friend Mr. Marsh about this time, I fulfilled it, and begged of him that he would see the case along with me, which he kindly did.

On our arrival, the patient was much in the same condition, only the vomiting and retching were not so violent, and she was better able to answer our questions. After a careful examination of the patient, we both came to the conclusion, that either the young woman had been poisoned by some com-

mon irritant, such as oxalic acid, and was very likely to die; or, if the symptoms were arising in the course of disease, that she would surely die. Having so little hope of her recovery, at our suggestion, she expressed a wish to receive a visit from a clergyman and a lawyer.

We then ordered her draughts of medicinal hydrocyanic acid in effervescence with bicarbonate of potass and lemon-juice, one every hour until the vomiting and hiccup should cease. At the same time, a pint of beef-tea, and four ounces of port wine were to be administered *per anum*, one half at a time, and as much ice as she chose to swallow. From the first moment of my suspicions, a sharp espionage was instituted over the movements of the domestic, and all communication between her and her mistress was at an end for the present, the cooking being done in the bedroom, by the new nurse. The patient and her fresh attendant were at the same time informed of our suspicions, and of the party suspected, in order the more effectually to prevent the patient from receiving anything, not even a glass of cold water, from the hands of the domestic. For this practice the profession are indebted to the recent trial of Dr. Smethurst, and the excellent advice resulting therefrom, which appeared as a leader in the *Medical Times and Gazette* for September 3rd last. The writer states—"We think it may be laid down, then, as a general rule, that in all cases of suspected poisoning, the medical attendant should first communicate his suspicions to the patient."

On our visiting the patient in the evening, we found the pulse 74, and rather full, the face flushed; the vomiting and hiccup had entirely ceased, and reaction was fairly established.

Next day, she had the following symptoms. Although they were not witnessed by either Mr. Marsh or myself, yet the patient and the nurse are so certain of their occurrence, and so clear in their statements, that I give full credit to their testimony:—They were involuntary twitching between the shoulders and back of the neck, corresponding to the action of the trapezii and rhomboidei muscles, as the head was drawn backwards and the shoulders towards each other. The same involuntary twitchings were experienced and witnessed in the flexors of the upper and lower extremities, even to the fingers and toes. They were unaccompanied with rigidity, frequent but short in duration, and more distressing and annoying than actually painful. The patient informs me that she often laid hold of a limb with her hand in order to stop the action, but it was quite impossible; and she thinks, that if she had been in an erect posture she must have fallen to the ground. She describes the action as irregular, both in regard to the limb or limbs affected and to the period of their occurrence. The twitchings extended over a period of at least twenty-four hours, and they did not occur until some hours after the vomiting ceased. During the occurrence of these symptoms, a copious flow of a dark-coloured fluid passed from the patient *per vaginam*. So copious was it, that it saturated the napkin and bed-clothes. I have lately seen the bed-clothes, the stains are very large and dark coloured, and they have resisted all domestic efforts at removal. I do not profess to be able to account for this discharge. The catamenia had appeared shortly before, and have appeared since her illness; no ovum ever came away, and there was no reason to suspect anything of the sort.

In a day or two from the date of the excessive vomiting and collapse, our patient was thoroughly convalescent; her appetite was such as she had not experienced for months; and within a week she was independent of our services, even as regards the everlasting nausea, from which, she tells me, she had suffered now and again for the last two years; in other words, while she was served by the attendant.

In the meantime, the contents of the phial were being carefully tested for arsenic, antimony, lead, mercury, zinc, copper, and iron, but no trace of them was found. It was then examined for oxalic acid and strychnia, but no sign of the presence of either of them made its appearance. Under the microscope there was nothing to be seen but mucus-corpuscles, and the *débris* of partially digested starch granules, with epithelium. The liquid was greenish (but at the first, I am informed, it was of a reddish-brown colour); it was highly acid, and somewhat viscid; specific gravity, 1.010. It was subsequently analysed by Dr. Muspratt, and found to contain "a small portion of phosphoric acid, a small quantity likewise of sulphuric, and a large quantity of hydrochloric acid, the chief part of which, as also of the other compounds, were found to be in a state of chemical combination," and quite compatible with the absence of poison.

Although no poison was found, it is not to be wondered at,

as the vomiting had been going on for twenty hours before the fluid vomited was obtained. The collateral evidence was so very suspicious, that the woman, whose appearance was most unprepossessing, and whose previous character was bad, was summarily dismissed; but without any formal imputation being put upon her conduct.

REMARKS. (a) *The question of Poisoning.* The suspicion of poisoning rests on the following data, part of which did not transpire until a day or two after the violent vomiting and collapse:—

1. The patient is young and unsuspecting, an orphan, friendless, and has no one to inherit her means.

2. This was long known to the domestic, who was much her senior, and who always took the upper hand with her.

3. On various occasions during her illness, but more particularly on the day of the vomiting and collapse, the domestic said to her mistress, that "she was quite astonished she had not made some arrangement about her affairs, as she could not have long to live."

4. The domestic knew that I was in attendance, and yet she allowed the patient to vomit for nearly twenty hours without informing me, or without suggesting my being called; and when she did call me, it was only at the repeated request of her mistress. Most likely this delay was the cause why no poison was found.

5. The domestic did not act up to my orders; namely, to retain everything which might come from her mistress for my inspection. I am informed by my patient, that the basin in which she vomited was more than six times emptied during the night; and the contents were thrown into an ash-pit, where no trace of them could be seen; and, even after I had secured some of the vomit, on my return from the druggist's, the basin had again been emptied, and was scrupulously washed clean and dried. The woman was not, as a rule, addicted to cleanliness, but the reverse.

6. I had also ordered the domestic to give the patient nothing but rice porridge. I have learned since, that the patient never got any—the domestic, of her own accord, having given oatmeal gruel instead. The gruel was administered every half hour or so, but it always came up instantaneously, even before she had time to lay down the bowl. (None of this gruel had been given for many hours before my arrival.) On Mr. Marsh and myself cross-examining the patient relative to the taste of the gruel, she said she thought it was peculiar, and distinctly different from the taste of the tea and other liquids, of which she had partaken about the same time. She added, that, as her thirst at the time was very great, and much increased by each dose of the gruel, she drank it with such avidity, that she took no particular notice of the taste when swallowing it; this much she does remember, that it came up much more *sour* than when it went down. The patient has lately informed me that she has often been given, by the same party, a somewhat similar gruel before this last illness, but it never did more than nauseate.

7. The symptoms were not those which might be expected as a termination or a sequel of peritonitis; while in every respect they tallied with the effects of an irritant poison, such as oxalic acid or one of its salts.

8. It will be remembered that I had ordered on one occasion twelve, and on another eight, leeches to the abdomen. I have been told since, that they did not fix well, that they soon came off, and, with one exception, they all died immediately, the only exception dying next day. In a case of poisoning by oxalic acid, recorded by Dr. Arrowsmith, and quoted by Professor Christison, *the leeches bit, did not fill, and they all died*, though the leeches were not put on for several hours after the poison was taken. (Christison, *On Poisons*, 4th ed., p. 223.)*

9. Lastly, the entire disappearance of the nausea which had existed from November 8th (more than three weeks), to say nothing of previous attacks of it during the last two years; the cessation of the vomiting and collapse by the administration of a few simple means; the toleration by the stomach of beef-tea, fish, flesh, and vegetables, a day or two following the excessive vomiting and collapse; and the otherwise rapid and complete convalescence on the total separation of the domestic from her mistress; go to prove the case as one of poisoning, and point to the attendant with suspicion.

(b) *Nature of the Poison administered.* Although in this case no poison has been chemically detected, I do not suppose there can be a reasonable doubt that the symptoms manifested

* In December 1857 (or two years ago), I applied six leeches to the os uteri of the same patient, none of which died for months afterwards.

were those arising from the action of an irritant poison. It remains for me to state what I believe to have been the nature of the poison administered, and to give my reasons for so believing. In the first place, I have no hesitation in affirming that the poisonous agent was no other than oxalic acid, or one of its salts; administered at first in small but increasing doses, and ultimately in such a quantity as was likely to be suddenly fatal. The following are the data on which I found my belief:—

1. We have the attack of acute peritonitis, without the slightest exposure to cold, damp, or fatigue; and the system previously, and at the time of the attack, robust and healthy.

2. The relapse of the inflammatory action, also arising without any evident cause.

3. The death of the twenty leeches used on both of these occasions; coupled with the fact, that, on a previous occasion, six leeches were applied on account of inflammation of the cervix uteri, none of which died.

4. The constant and unaccountable sensation of nausea and oppression.

5. The sudden accession of the vomiting and retching, with the burning pain at the *pit of the stomach*; their long continuance, and the singultus and deadly collapse.

6. Above all, on the following day, the *spasmodic twitching* of the neck and between the shoulders, as also of the upper and lower extremities.

I know of no agent which is capable of producing those various phenomena, except oxalic acid or its salts.

As it is not generally known that oxalic acid has the power of producing spasmodic twitchings of the parts I have alluded to, allow me to state the following facts. In a case of poisoning by oxalic acid, recorded in the *Lancet* for 1851, vol. i, page 329, by Mr. Bourne of Nottingham, the wife of a sergeant took three drachms in three ounces of water, to commit suicide, but recovered. It is there stated: "Subsequently, there were convulsions, spastic contractions of the muscles of the jaws and extremities . . . twitching of the muscles of the face, and insensibility." Mr. Bourne adds: "For a month afterwards, the face and extremities were subject to spasmodic twitchings." In this case, it will be observed that the quantity swallowed was comparatively small, three drachms; moreover, within a quarter of an hour of the ingestion of the poison, the stomach was emptied by the stomach-pump, and washed out four or five times. These facts are important, because I feel convinced that the development of the nervous or secondary symptoms depends much upon the smallness of the dose and its being diluted, so that absorption may take place. Christison says, that dilution has nearly the same effect as increase in quantity, and that the symptoms vary according to the quantity given, and the degree to which it has been diluted. He adds: The symptoms peculiar to oxalic acid are seen most characteristically when the acid has been so given as not to prove fatal for an hour or more. (*Edin. Med. and Surg. Jour.*, vol. xix, pp. 182-183.) In further proof of those spasmodic twitchings being pathognomonic of certain cases of oxalic acid poisoning, there is a very full and carefully detailed case recorded in the *Edinburgh Medical and Surgical Journal* (vol. xiv, p. 607), by Mr. Fraser, Deputy Inspector of Hospitals at Gibraltar, in 1818. Half an ounce of oxalic acid was swallowed by mistake for Cheltenham salts. A good deal of it was vomited, and antidotes, as magnesia, etc., were given. General agitation and violent spasms and hiccup were observed to recur at irregular intervals for eleven days, which increased in violence, until he died on the fourteenth day from inanition.

Toxicologists are agreed that the salts of oxalic acid, particularly the oxalate of ammonia and the binoxalate and quadroxalate of potassa, produce the same symptoms as the pure acid, although they are not so caustic in their mode of action. In a case of poisoning by the binoxalate, recorded by Dr. Webb, in the *Medical Times and Gazette* of last year (vol. ii, p. 378), he states: "Since I last saw the case, he has suffered from spasmodic contractions of the hands and from cramps in the legs." The quantity taken was about a quarter of a teaspoonful, or fifteen grains.

Professor Christison, Dr. Coindet, Orfila, and others, when experimenting on dogs and other animals with this poison, have invariably observed twitchings of the extremities, and tetanic convulsions, in the form of opisthotonos, to precede death. The facts which I have stated, prove that under certain conditions of dilution, and when there is not too much given, or where there is not too much left in the system, so as to produce rapid death, but to favour absorption, convulsions and spasmodic twitchings have also been observed in man. I

think, then, I am justified in concluding that the poison administered in this case was none other than oxalic acid, or one of its salts.

In conclusion, it has been a source of deep regret to me that I did not examine the faeces, blood, or urine of my patient. I felt so confident of finding the poison, whatever it was, in the vomited matters, that I entirely overlooked these other sources until it was too late. I regret this circumstance, the more so, as I believe that this case is about the first one on record where oxalic acid or any of its salts have been used for criminal purposes, particularly as a slow poison; and it would have been a most important point gained, if we could have established the value of the examination of the blood and of the excretions in such cases.

I shall endeavour, on an early occasion, to lay before the Society the amount of our present knowledge on this subject, with such original observations and experiments as I shall be able to bring to bear upon it.

British Medical Journal.

SATURDAY, FEBRUARY 11TH, 1860.

THE MEDICAL SOCIETY OF LONDON.

THE readers of this JOURNAL, who have from time to time been instructed by the reports of the valuable papers read before the Medical Society of London, are for the most part probably not aware that this venerable and flourishing institution has been for some time subjected to the influence of party agitation—an influence which, if allowed to continue in the way in which it now exists, can scarcely fail of doing immense injury. We do not allude to honourable ambition for distinction in the Society, but to a desire for prominent position, which almost irresistibly gives the idea that individual honour is preferred to public welfare. Before entering on a further examination of this subject, a few explanatory remarks are perhaps necessary.

When, in 1850, the old Medical Society and the Westminster Medical Society were amalgamated under the name of the Medical Society of London, the mode in which the vacant places were filled up at the annual election of officers was by the free selection, by each Fellow, of any names he pleased from a complete list of the Society. No attempt was ostensibly made to guide his choice. In 1854, objections were raised against this system; and a new mode was adopted, by which there was sent to every Fellow of the Society, previously to the election, a list prepared by the Council, containing the names of the then existing officers, distinguishing those eligible for re-election; alongside of which was placed another list, containing twice the number of names necessary to fill the vacancies. At the same time, it was free to the Fellows to choose any other names. Under this plan, a result followed which was most remarkable, and which could not fail to rouse jealousy. For three years in succession, the Presidents of the Society were chosen from officers of the same hospital; and in the list which was issued in February of last year, the name of a fourth medical officer of the same institution was placed first of those proposed for the presidential chair. In addition to this, there were other details which gave the idea of a dictatorial power being exercised; and, as would naturally be the case in a republican institution under such circumstances, a rebellion was provoked. The result of this was that, when the list of new officers was